

REMARKS

Favorable reconsideration of this application is requested in view of the foregoing amendments and the following remarks. Claims 24-46, 71-84 and 86-95 are pending in the application. Claim 85 is canceled without prejudice or disclaimer. Claims 1-23 and 47-70 were previously canceled without prejudice or disclaimer.

The claims are amended to more clearly define the invention, support for which is found in the description as originally filed. Specifically, support for a substantially vertically aligned, with respect to a plane of the cantilever body, elongated nanostructure is found at paragraph 0031 of this application as originally filed. Support for wherein the substantially vertically aligned elongated nanostructure is directed out of the plane of the substrate is found at paragraph 0028 of this application as originally filed. The insertion of the term substantially before the phrase vertically aligned is not a narrowing amendment.

The title is amended to more concisely/clearly name the claimed invention. The abstract is amended to more accurately summarize the claimed invention.

At page 3 of the Action, the Examiner objects to claim 85. Claim 85 is canceled without prejudice or disclaimer.

Accordingly, withdrawal of this objection is respectfully requested.

At page 4 of the Action, the Examiner alleges that the limitation "an expanded base" is essential to support claims 32 and 79 and that the incorporation by reference of U.S. Pat. No. 6,649,431 by reference is ineffective. Contrary to the Examiner's position, there is no logical or legal reason to require the amendment of this specification to describe or enable material that was already published before this application was filed. A fully enabling description of these dependent claim limitations was already published in U.S. Pat. No. 6,649,431 on November 18, 2003 before this application was filed on November 19, 2003. Claim limitations that are already published cannot logically be essential since they are already part of the public literature and, therefore, known to those of skill in the art.

Accordingly, withdrawal of this requirement is respectfully requested.

At page 4 of the Action, the Examiner alleges that the limitation "deactivated layer that substantially surrounds a portion of the vertically aligned nanostructure" is not sufficiently described and enabled in this application to enable one of skill in the art to make and use the invention. The claims recite the phrase "deactivating layer" not deactivated. Contrary to the Examiner's position, the instant application describes the deactivating layer in detail and provides adequate enablement to one of skill in the art regarding how to make and use embodiments of the invention that include a deactivated layer. Specifically, embodiments of the invention that include a deactivating layer are described and enabled in paragraph 0043 of this application, at page 14, lines 13-14 where it is explicitly stated that "[t]his creates an electrochemical probe with an extremely small active electrode region" and also illustrated as element 252 in figure 2, element 452 in figure 5 and element 652 in figure 6. Conformal deposition of a layer (e.g., silicon nitride layer) is well known to those of skill in the art. This application teaches the function of this layer as well as where and when to deposit this layer.

Accordingly, withdrawal of this objection is respectfully requested.

At pages 4-5 of the Action, the Examiner states that the listing of references in the specification is not a proper information disclosure statement. That may be, but the references were listed in the application as-filed to ensure that the record shows that Applicants met their duty of disclosure. A proper Information Disclosure Statement will be filed as a separate paper in the very near future.

At page 5 of the Action, the Examiner alleges that corrected drawings are required. Contrary to the Examiners position, corrected drawings were already filed on June 21, 2004 as part of the reply to the Notice to File Missing Parts. To expedite the allowance of this application, another set of corrected drawings are filed as an amendment herewith. The corrected drawings are explicitly marked "replacement sheet."

Accordingly, withdrawal of this objection is respectfully requested.

At pages 5-6 of the Action, claims 33-34 and 80-81 are rejection as nonenabled. The Examiner alleges that this application does not reasonably provide enablement for a deactivating layer. Contrary to the Examiner's position, the instant application describes the deactivating layer in detail and provides adequate enablement to one of skill in the art regarding how to make and use embodiments of the invention that include a deactivating layer. Specifically, the deactivating layer(s) are shown as element 252 in figure 2, element 452 in figure 5 and element 652 in figure 6. As noted above, embodiments of the invention that include a deactivating layer are described and enabled in paragraph 0043 of this application, at page 14, lines 13-14 where it is explicitly stated that "[t]his creates an electrochemical probe with an extremely small active electrode region." As also noted above, this application teaches the function of this layer as well as where and when to deposit this layer

Accordingly, withdrawal of this rejection is respectfully requested.

At pages 6-7 of the Action, claims 24, 26-28, 30-31, 71, 74-75, 77-78 and 84-85 are rejected as anticipated by U.S. Pat. No. 6,743,408 to Lieber et al. Lieber does not disclose or suggest substantially vertically aligned elongated nanostructures. The term "vertically" is not even used once in Lieber. In more detail, there is no alignment guaranteed in Lieber since Lieber is not using a plasma enhanced CVD.

Lieber does not disclose or suggest a substantially vertically aligned elongated nanostructure directed out of the plane of the substrate. Instead Lieber teaches a tip assembly including a pyramidal base that is of a different material than the fiber. The claimed invention does not include the dissimilar material pyramidal base of Lieber and, therefore, the tip assembly of Lieber.

The devices of Lieber are not true high aspect ratio structures because of the presence of the Lieber pyramidal base(s). The claimed invention requires no post fabrication process (i.e., focused ion beam milling or tip shortening (see paragraph 033 of this application as filed).

Accordingly, withdrawal of this rejection is respectfully requested.

At pages 7-9 of the Action, claims 24-26, 28, 30-31, 35, 39-46, 71-73, 75, 77-78, 82-83, 85, 88-89 and 90-95 are rejected as anticipated by US Pub No 2002/0084410 to Colbert et al. Colbert does not disclose or suggest substantially vertically aligned elongated nanostructures. The term "vertically" is not even used once in Colbert. In more technical detail, there is no alignment guaranteed in Colbert since Colbert is not using a plasma enhanced CVD.

Colbert does not disclose or suggest a substantially vertically aligned elongated nanostructure directed out of the plane of the substrate. Instead Colbert teaches a tip assembly including a pyramidal base that is of a different material than the Colbert fiber. The claimed invention does not include the dissimilar material pyramidal base of Colbert and, therefore, the tip assembly of Colbert.

Accordingly, withdrawal of this rejection is respectfully requested.

At page 9-10 of the Action, claims 29, 32, 76 and 79 are rejected as obvious over Colbert in view of US Pub. No. 2002/0117951 to Merkulov et al. There is no motivation to combine the teachings of Colbert and US Pub. No. 2002/0117951 to Merkulov. One of ordinary skill in the art would have no motivation to modify the teachings of Colbert to include the expanded bases of Merkulov since Colbert already has a pyramidal base (albeit of a dissimilar material). Further, although Merkulov teaches improved mechanical properties and possible use as probes, Merkulov is silent at to the important context of cantilever placement.

Accordingly, withdrawal of this rejection is respectfully requested.

At page 10-11 of the Action, claims 38 and 87 are rejected as obvious over Colbert in view of Lieber et al. Combining the disclosures of the Colbert and Lieber references does not obviate their above discussed deficiencies.

Accordingly, withdrawal of this rejection is respectfully requested.

At page 11 of the Action, claims 37 and 86 are rejected as obvious over Lieber et al '408 in view of US Pub No 2001/0051367 to Kiang. Kiang is not material to the claimed invention. Magnetoresistance has nothing to do with the claimed invention.

Accordingly, withdrawal of this rejection is respectfully requested.

Other than as explicitly set forth above, this reply does not include acquiescence to statements, assertions, assumptions, conclusions, or combination thereof in the Office Action. In view of the above, all the claims are considered patentable and allowance of all the claims is respectfully requested. The Examiner is invited to telephone the undersigned (at direct line 512-394-0118) for prompt action in the event any issues remain that prevent the allowance of any pending claims.

In accordance with 37 CFR 1.136(a) pertaining to patent application processing fees, Applicant requests an extension of time from September 9, 2005 to November 9, 2005 in which to respond to the Office Action dated June 9, 2005. A notification of extension of time is filed herewith.

The Director of the U.S. Patent and Trademark Office is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 50-3204 of John Bruckner PC.

Respectfully submitted,


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